

REMARKS**INTRODUCTION:**

In accordance with the foregoing, claims 2, 21, 23 and 25 have been canceled without prejudice or disclaimer, and claims 1, 19, 20, 22 and 24 have been amended. No new matter is being presented, and approval and entry are respectfully requested.

Claims 1, 3-20, 22, and 24 are pending and under consideration. Reconsideration is respectfully requested.

AMENDMENT OF THE TITLE:

The title has been changed from "SINGLE LAYERED ELECTROPHOTOGRAPHIC PHOTORECEPTOR" to ---ELECTROPHOTOGRAPHIC PHOTORECEPTOR--- for clarity.

REJECTION UNDER 35 U.S.C. §112:

In the Office Action, at page 2, numbered paragraph 2, claim 19 was rejected under 35 U.S.C. §112, first paragraph, for the reasons set forth therein. This rejection is traversed and reconsideration is requested.

Claim 19 has been amended for clarity, and is now submitted to be in allowable form under 35 U.S.C. §112, first paragraph.

CHANGES TO THE SPECIFICATION:

The specification has been reviewed. Changes have been made to paragraph [0049] of the specification to correct a typographical error. No new matter has been added.

REJECTION UNDER 35 U.S.C. §102:

In the Office Action, at page 2, numbered paragraph 4, claim 19 was rejected under 35 U.S.C. §102(b) as being anticipated by each of Bach (USPN 4,115,289) and Vijayendran (USPN 4,079,911). This rejection is traversed and reconsideration is requested.

Claim 19 has been amended to recite: "An image forming apparatus having a liquid toner developing device for electrophotographic development, the image forming apparatus having a photoconductor unit including an electrophotographic photoreceptor, the electrophotographic photoconductor comprising the electrophotographic photoreceptor claimed in claim 1."

Bach (USPN 4,115,289) discloses an electrophotographic process and materials for the production of multi-color original in which an electrostatic charge is applied to a receptor sheet having a face portion subdivided into photoconductive segments containing sensitizing

components in interspersed segments which cover different portions of the visible light spectrum and in which each such segment contains a solubilizable dye color corresponding to the color of the spectrum other than that to which the segment is sensitized and in which the exposed receptor is developed with a toner in which the dye component is soluble in response to toner activation for transfer of dye color from the developed receptor to copy sheets brought into surface contact therewith. Bach (USPN 4,115,289) does not teach or suggest an image forming apparatus having a liquid toner developing device for electrophotographic development, the image forming apparatus having a photoconductor unit including an electrophotographic photoreceptor, the electrophotographic photoconductor comprising the electrophotographic photoreceptor claimed in claim 1 of the present invention. Thus, amended claim 19 is not taught or suggested by Bach (USPN 4,115,289).

Vijayendran (USPN 4,079,911) discloses liquid toner compositions for developing latent images that are highly hydrophobic and comprise pigment, dye, polymer and a silane treated fumed silica, the combination being suspended in a volatile isoparaffinic hydrocarbon vehicle. Vijayendran (USPN 4,079,911) does not teach or suggest an image forming apparatus having a liquid toner developing device for electrophotographic development, the image forming apparatus having a photoconductor unit including an electrophotographic photoreceptor, the electrophotographic photoconductor comprising the electrophotographic photoreceptor claimed in claim 1 of the present invention. Thus, amended claim 19 is not taught or suggested by Vijayendran (USPN 4,079,911).

Hence, it is respectfully submitted that amended claim 19 is not anticipated under 35 U.S.C. §102(b) by either of Bach (USPN 4,115,289) or Vijayendran (USPN 4,079,911).

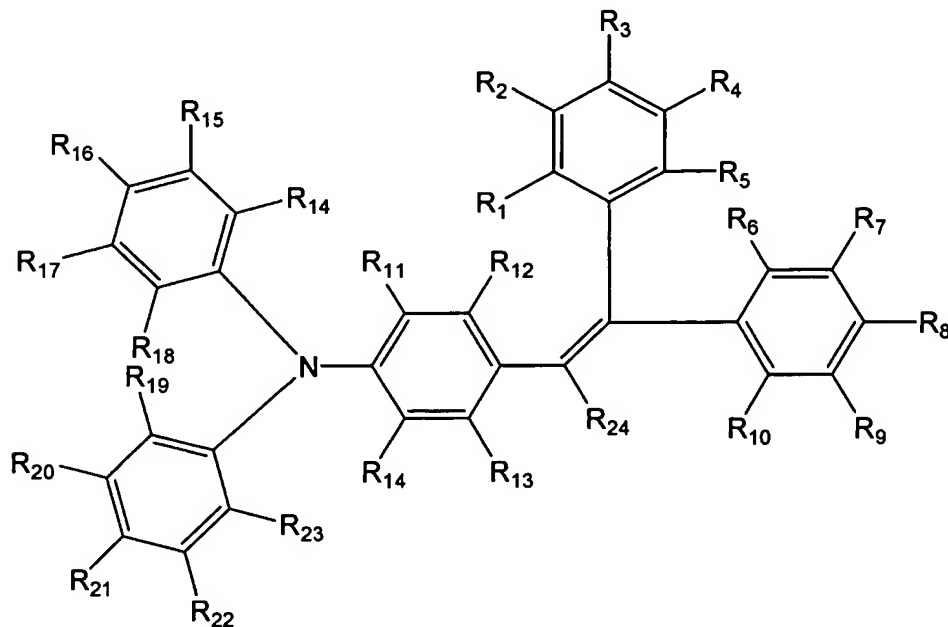
REJECTION UNDER 35 U.S.C. §103:

In the Office Action, at page 3, numbered paragraph 6, claims 1-18 and 20-25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Takeuchi (2002/0025484). The reasons for the rejection are set forth in the Office Action and therefore not repeated. The rejection is traversed and reconsideration is requested.

Independent claim 1 has been amended to include the features of claim 2, and claim 2 has been cancelled without prejudice or disclaimer. Similarly, independent claim 20 has been amended to include the features of claim 21 and claim 21 has been cancelled without prejudice or disclaimer; independent claim 22 has been amended to include the features of claim 23 and claim 23 has been cancelled without prejudice or disclaimer; and independent claim 24 has been amended to include the features of claim 25 and claim 25 has been cancelled without prejudice or disclaimer.

It is respectfully submitted that amended claims 1, 20, 22, and 24 disclose an electrophotographic photoreceptor, an electrophotographic drum, an electrophotographic cartridge, and in an image forming apparatus, respectively, each utilizing a charge transport material in the undercoating that is a compound represented by Formula 1:

Formula 1



wherein R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₈, R₉, R₁₀, R₁₁, R₁₂, R₁₃, R₁₄, R₁₅, R₁₆, R₁₇, R₁₈, R₁₉, R₂₀, R₂₁, R₂₂, R₂₃, and R₂₄ are independently selected from the group consisting of a hydrogen atom, a halogen atom, a hydroxy group, a carboxyl group, a cyano group, an amino group, a nitro group, a C₁-C₂₀ optionally substituted alkyl group, a C₆-C₃₀ optionally substituted aryl group, a C₁-C₂₀ optionally substituted halogenated alkyl group, a C₇-C₃₀ optionally substituted aralkyl group, and a C₁-C₂₀ optionally substituted alkoxy group,

which is not taught or suggested by Takeuchi (2002/0025484). The charge transport materials of claim 2 of the present invention (now included in claim 1 and the other independent claims) are included in an undercoating, whereas Takeuchi does not disclose the undercoating including the charge transport materials. In Takeuchi, the charge transport materials are used only in a photosensitive layer.

If the undercoating does not include the charge transport materials, the movement of (+) charges generated in a photosensitive layer is blocked in the undercoating, resulting in increased exposure potential and reduced sensitivity of a produced photoreceptor. However, if the undercoating includes the charge transport materials of claim 2 (now in claim 1 and the other independent claims) of the present invention, the movement of (+) charge is enabled in the undercoating, suppressing an increase in exposure potential. Meanwhile, all charge transport materials cannot be used in the undercoating in consideration of compatibility with the

photosensitive layer.

The photosensitive layer uses an organic solvent for dispersion of materials. In contrast, an alcoholic solvent, a halogenated solvent, or cosolvents thereof are used as the solvent for dissolving the binder in the undercoating. Generally, most charge transport materials are not easily dissolved in said solvents. Therefore, finding charge transport materials soluble in the solvents is very important for preventing an increase in exposure potential caused by the undercoating. While the present invention provides an undercoating including a charge transport material that is soluble in the solvents, and a binder resin, Takeuchi does not discuss the undercoating including the charge transport materials of claim 2 (now in claims 1 and the other independent claims) of the present invention.

Thus, it is respectfully submitted that the amended independent claims 1, 20, 22 and 24 are different from, and patentable over, Takeuchi under 35 U.S.C. §103(a).

It is known that organic compounds are compounds in which elements mainly attached to carbon structures combine, and due to various combinations, a large number of compounds having various characteristics are formed. Even if two compounds differ only by one carbon, the characteristics may be very different. As for isomers, even though the molecular formula is the same, the characteristics of the isomers may be different. Thus, it is respectfully submitted that, when compared with the invention of Takeuchi, amended independent claims 1, 20, 22 and 24 of the present invention recite the use of different compounds having different characteristics, in particular, in the undercoating (see above).

Hence, it is respectfully submitted that amended independent claims 1, 20, 22, and 24 are patentable under 35 U.S.C. §103(a) over Takeuchi (2002/0025484). Since claims 3-18 depend from amended claim 1, claims 3-18 are submitted to be patentable under 35 U.S.C. §103(a) over Takeuchi (2002/0025484) for at least the reasons that amended claim 1 is submitted to be patentable under 35 U.S.C. §103(a) over Takeuchi (2002/0025484).

CONCLUSION:

In accordance with the foregoing, it is respectfully submitted that all outstanding objections and rejections have been overcome and/or rendered moot, and further, that all pending claims patentably distinguish over the prior art. Thus, there being no further outstanding objections or rejections, the application is submitted as being in condition for allowance which action is earnestly solicited.

If the Examiner has any remaining issues to be addressed, it is believed that prosecution can be expedited by the Examiner contacting the undersigned attorney for a telephone interview to discuss resolution of such issues.

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If there are any underpayments or overpayments of fees associated with the filing of this Amendment, please charge and/or credit the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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